REMARKS

This Response is submitted in reply to the Final Office Action dated May 30, 2007. Claims 1-2, 8-9, 11-15, 17-18 and 23-26, pending in the application, stand rejected as follows:

- Claims 1-2, 8, 11-15 and 25-26 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,224,263 to Saville et al. (hereinafter "Saville et al.") in view of U.S. Patent No. 4,682,900 to Gu (hereinafter "Gu"); and
- Claims 9, 17-18 and 23-24 under 35 U.S.C. § 103(a) as being unpatentable over Saville in view of Gu and in further view of U.S. Patent No. 5,833,369 to Heshmat (hereinafter "Heshmat").

The rejections are traversed and reconsideration is respectfully requested, particularly in view of the following remarks. Applicant has also submitted herewith a declaration of Dr. Giridhari L. Agrawal (hereinafter "Agrawal Decla."), the inventor of the present application, who provides his insight as one familiar with the claimed subject matter and the field of thrust bearing technology and compliant foil thrust bearings used in high-speed turbomachinery, as well as the references cited by the Examiner.

The Claimed Subject Matter

Claims 1-2, 8-9, 11-15, 17-18 and 23-26 are pending in the present application, with claims 1, 17 and 25 being independent claims. Applicant previously amended claims 1, 17 and 25 to emphasize the flatness of the thrust bearing plate for the claimed compliant foil thrust bearing (i.e., a flat thrust bearing plate). As previously noted, prior art foil thrust bearings have had difficulty in maintaining the flatness of the bearing plate, especially as the size and diameter of the bearing increases. Specifically, a well known problem with conventional foil thrust bearings, such as illustrated in U.S. patent No. 4,682,900 to Gu, that has persisted for over 30 years, and particularly with annular plates used in the bearing assembly, is that they deform from a flat to a cone-shaped configuration and are thus susceptible to waviness distortions. (See Agrawal Decla., ¶¶ 7, 8). Such deformations may be introduced at the time of

manufacturing – e.g., during heat treatment or welding of the foils – or be introduced during the service life of the bearing. Some prior art bearing plates are intentionally warped, such as the thrust bearing disk disclosed in U.S. Patent Nos. 6,224,263 and 4,624,583 to Saville et al.

As noted in the specification of the present application, load capacity of a foil thrust bearing, and thus its operation, is dependent on the flatness of the bearing. (See, e.g., Appl'n, ¶¶ 6, 15 and 28). Specifically, as flatness is maximized, load capacity increases. Air film thickness during operation of the bearing assembly is on the order of 0.0001 inch thick. Even the slightest wave, defect or stepped configuration can compromise the load capacity of the bearing, which can decrease the bearing life due to increased foil wear. Thus, keeping the bearing flat ensures that the hydrodynamic wedge between the stationary top foil pad and the rotating thrust runner is properly formed during bearing operation. (See also Agrawal Decla., ¶ 7).

Accordingly, Applicant's invention is directed towards manufacturing a flat, or planar, bearing plate, and maintaining the flatness during operation by making the bearing plates more compliant through circumferentially arranging decoupled bearing segments about the thrust bearing plate, which relieve the internal stresses that cause undesired deformation and waviness distortion. (See also Agrawal Decla., ¶ 8). Prior to Applicant's invention, such subject matter was not taught or suggested, and other devices and designs were pursued.

Applicant's Arguments with Respect to the Rejections

A. *Rejection of Claims 1-2, 8, 11-15 and 25-26 under 35 U.S.C. § 103(a)*

The Examiner has rejected claims 1-2, 8, 11-15 and 25-26 under 35 U.S.C. § 103(a) as being unpatentable over Saville et al. in view of Gu. As previously asserted, independent claims 1, 17 and 25 clearly recite a flat thrust bearing plate that includes a plurality of decoupled bearing segments defined in part by a plurality of generally radially extending lines of weakness circumaxially dispersed about the thrust bearing plate, the decoupled bearing segments being circumferentially arranged about the thrust bearing plate. As noted in the specification, the decouplable aspect provided by lines of weakness permits the flatness of the thrust bearing plate to be maintained. (See Appl'n, ¶ 28). The

Examiner's rejection specifically noted that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Saville to include a flat thrust plate with individual foils mounted thereon, for the desired purpose of providing improved operation under extreme load conditions and accommodating eccentricity of relatively movable elements and further providing damping effect as taught by Gu." (Office Action, p. 3).

As discussed below, the cited references do not utilize, either individually or combined, lines of weakness in a flat thrust bearing plate to define a plurality of decoupled bearing plates circumferentially arranged about the thrust bearing plate so as to maintain the flatness of the thrust bearing plate. Indeed, the cited references are expressly directed to specific designs for addressing different problems for thrust bearings (including eliminating the need for a plurality of individual foils, maintaining requisite stiffness of the bearing plate, and for permitting fluid flow through the plate) such that it would not have been obvious to one of ordinary skill in the art to modify the references to try to create Applicant's claimed invention(s).

U.S. Patent No. 6,224,263 to Saville et al. is directed to a "Foil Thrust Bearing with Varying Circumferential and Radial Stiffness". Specifically, a foil thrust bearing 10 comprises a thrust runner 11, a thrust bearing disk 14, an underspring element 22 and a thrust plate 28. (See, e.g., Saville et al., '263 patent, FIG. 1). The thrust bearing disk 14 is annularly shaped and comprises a plurality of integrated bearing pads or foils 16. The pads 16 are circumferentially positioned about the entire surface of the thrust bearing disk 14, and are alternately positioned with a plurality of slots 18. (See, e.g., Saville et al., '263 patent, FIG. 2, col. 3, ll. 9-22 & 29-32). The slots allow a substantially unrestricted flow of fluid to pass through the thrust bearing disk 14 to form a fluid film between the disk and the runner surface 13. (See Saville et al., '263 patent, col. 3, ll. 32-36). The slots are not provided to maintain flatness in the thrust bearing disk since the disk is not flat to begin with.

In the thrust bearing disk 14 disclosed by Saville et al., transition areas 20 are provided adjacent each slot 18. The transition areas 20 form a stepped configuration between adjacent pads 16, and thus, a stepped configuration over the entire thrust bearing disk 14, which is clearly not flat or planar. (See Saville et

al., '263 patent, col. 3, ll. 43-46). The general design of the thrust bearing disk 14 relied upon by the Examiner reverts back to an earlier Saville et al. patent, which is incorporated into the cited reference. (See Saville et al., '263 patent, col. 3, ll. 9-11 (referring to U.S. Patent No. 4,624,583 to Saville et al.)). The '583 patent illustrates several variations of an integral thrust bearing disk, including disks with slots, slits and perforations. In general, the slots define and separate sector-shaped portions of the disk that form a plurality of integral converging bearing pads or foils. (See Saville et al., '583 patent, FIG. 2). Indeed, the object of the Saville et al. invention is described as providing a thrust bearing disk "with integral compliant bearing pads or foils thereby eliminating the need for a plurality of individual foils...." (Saville et al., '583 patent, col. 2, ll. 14-21 (emphasis added)). Thus, unlike the present invention, the foils are part of the thrust disk, as opposed to being disposed on the surface of the thrust bearing plate (cf., e.g., claim 1).

Moreover, because the focus of the Saville et al. invention is to integrate the foils into the thrust bearing disk, the disk must be provided with transition areas between each sector, shown in the figures of the '583 patent as diverging surface ramps provided between each pad section, so that the compliancy of the foils is not affected by the rigidity of the disk. (See Agrawal Decla., ¶ 10). The ramps are radially aligned with the slots. Thus, the thrust bearing disk provides alternatively converging surface foils/pads and diverging surface ramps that form a waved cross-section. (See, e.g., Saville et al., '583 patent, FIGS. 3, 5, 7, 9 and 11; col. 3, ll. 5-7). This shape permits the foil portions to be compliant in accordance with the intended function of such bearing foils while allowing the bearing disk to maintain requisite stiffness. (See, e.g., Saville et al., '583 patent, col. 1, ll. 13-26). Certainly, the thrust bearing disks disclosed by Saville et al. in either of their cited patents are not flat, as recited in the pending claims, as previously amended.

In an effort to ignore the clear requirement in the Saville et al. references for a stepped plate design, the Examiner has cited U.S. Patent No. 4,682,900 to Gu for apparently the proposition that because flat thrust disks can either include foils mounted on the disk or have the foils integrated within the disk so that the Saville et al. design could not only be flattened, but also provided with non-

integrated foils mounted on the surface thereof. In essence, the Examiner is using Gu to recreate a disk that Saville et al. considered to be inferior.

Gu is generally directed to the design of an underspring for use in a thrust bearing. Specifically, Gu teaches a thrust bearing set-up involving a thrust runner 10 rotatably supported on a thrust plate 28 by means of a thrust bearing disk 14 and a thrust bearing underspring 22. The thrust bearing disk includes a plurality of compliant foils 16 and is illustrated as a flat plate with no lines of weakness or decoupled bearing segments. The underspring 22, by comparison, contains no such foils, and includes a plurality of tabs 32 defined by generally U-shaped slots 30. Each tab is deformed to define at least one bump 24 to provide stiffness for the thrust bearing disk 14. These bumps 24 are included in every embodiment of Gu. (See, e.g., Gu, '900 patent, FIGS. 2C, 5, 7B, 8-11 (showing underspring bumps in cross-section or perspective views)).

The Examiner appears to be generally relying on a brief statement in Gu regarding the existence of flat plates having foils integrated therein to assert that the Saville et al. design can be accomplished with a flat plate instead of one having diverging ramp portions. (See Gu, '900 patent, col. 2, ll. 44-52). Gu does not expressly show a flat thrust plate having integrated compliant foils. Instead, it cites U.S. Patent No. 4,247,155 to Fortmann for this teaching. While Fortmann does show perforations in the plate, these perforations are merely provided for replenishing cooling fluid flow and for purposely creating deformation in the disk to establish the hydrodynamic fluid film wedge. (See Fortmann, '155 patent, col. 2, l. 66 to col. 3, l. 3; see also Agrawal Decla., ¶ 12). By comparison, the lines of weakness, or slits, in the present invention prevent deformation of the bearing plate from occurring in the first place. (See Agrawal Decla., ¶ 12).

Thus, the leap from Saville et al., with a stepped plate design and integral foils, to a flat plate with foils mounted thereon, merely based on Gu's identification of two flat plate designs, goes directly against the teachings of Saville et al. themselves. For that reason alone, there is insufficient evidence that it would have been obvious to one of ordinary skill in the art to try a flat thrust bearing plate having foils mounted thereon and decouplable bearing segments defined by lines of weakness in order to maintain the flatness of the plate. (See also Agrawal Decla., ¶¶ 10, 11).

Additional reasons as to why the Examiner's proposed modification of the references are not proper and cannot render the claimed invention(s) obvious are provided below.

1. The Examiner's proposed combination and modification of the cited references teaches away from the invention in Saville et al.

Applicant respectfully submits that it would not have been obvious to modify Saville et al. to flatten the thrust bearing disk and mount individual foils mounted thereon while retaining the slots, as the Examiner suggests. As noted recently by the Supreme Court, "when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." K.S.R. Int'l Co. v. Teleflex, Inc., 2007 U.S. LEXIS 4745, at *34, 2007 WL 1237837 (2007) (citation omitted).

The object of the Saville et al. invention is described as providing a thrust bearing disk "with integral compliant bearing pads or foils thereby eliminating the need for a plurality of individual foils which must be individually attached or mounted to the thrust bearing disk." (Saville et al., '583 patent, col. 2, ll. 14-17) (emphasis added). In so making the foils integral, the Saville et al. invention added slots. "The function of the slots 18 is to allow a substantially unrestricted flow of fluid (i.e., air) to pass through the bearing disk 14 and form a fluid film between the runner surface 13 and the bearing surface 15." (Saville et al., '263 patent, col. 3, ll. 32-36). More importantly, however, Saville et al. explained that the integrated foil design was better than one with individually mounted foils:

> Since a portion of the heat generated in the hydrodynamic bearing film due to viscous dissipation is conducted away through the foils and the disk, the integration of the foils and the disk provides a shorter heat conduction path when compared to individual foils mounted upon a separate disk. The simplicity in design will also provide ease in fabrication and thus lower cost while still maintaining high bearing performance.

(Saville et al., '583 patent, col. 3, l. 64 to col. 4, l. 3).

Moreover, because the focus of the Saville et al. invention is to integrate the foils into the thrust bearing disk, the disk must include transition areas between each sector, shown in the figures of the '583 patent as diverging surface ramps provided between each pad section, so that the compliancy of the foils is not affected by the rigidity of the disk. (See, e.g., Saville et al., '583 patent, col. 1,

ll. 41-57 (identifying issues with separate foils); see also Agrawal Decla., ¶ 10). The diverging ramps are radially aligned with the slots in the disk. Thus, the disk provides alternatively converging surface foils/pads and diverging surface ramps that form a waved cross-section. (Se, e.g., Saville et al., '583 patent, FIGS. 3, 5, 7, 9 and 11; col. 3, ll. 5-7). This shape permits the foil portions to be compliant in accordance with the intended function of such bearing foils while allowing the bearing disk to maintain requisite stiffness. (See, e.g., Saville et al., '583 patent, col. 1, ll. 13-26).

Further, while Gu identifies the alternate options of a flat disk with individual foils and a flat disk with integral foils and perforations, Gu never mentions the benefit of using a flat disk, individual foils mounted thereon, and lines of weakness defining decouplable bearing segments for maintaining the flatness of the disk. (See also Agrawal Decla., ¶ 11).

Thus, one of ordinary skill in the art would not have combined Gu with Saville et al., as suggested by the Examiner's rejection, because the object of the Saville et al. invention is to eliminate the need for a plurality of individual foils mounted on a thrust bearing disk, thereby expressly teaching away from such combination. (See Agrawal Decla., ¶ 10; see also ¶¶ 11, 12).

2. The modification of Saville in the manner suggested by the Examiner is uniquely challenging or difficult to one of ordinary skill in the art in light of the cited prior art.

Applicant respectfully submits that it would not have been obvious to combine Gu with Saville in the manner suggested by the Examiner because the modification would have been uniquely challenging or difficult in light of the cited prior art. Leapfrog Enters., Inc. v. Fisher-Price, Inc., 2007 U.S. App. LEXIS 10912, *15 (*citing* KSR, 2007 WL 1237837, at *15).

The modification of Saville would have required one of ordinary skill in the art to ignore the benefits derived from the Saville thrust bearing disk - namely, "the integration of the foils and the disk provides a shorter heat conduction path when compared to individual foils mounted upon a separate disk. This simplicity in design will also provide ease in fabrication and thus lower cost while still maintaining high bearing performance." (Saville et al., '583 patent, col. 3, l. 64 to col. 4, l. 3). Therefore, the proposed modification would

have been challenging or difficult in light of these benefits and warnings by Saville, and one of ordinary skill in the art would not have modified the thrust bearing disk of Saville in the manner suggested by the Examiner.

3. There were no commonly understood benefits by those of ordinary skill in the art resulting from the modification of the prior art in the manner suggested by the Examiner.

It may be obvious to modify one reference in light of another in order to gain commonly understood benefits of such adaptation. See Leapfrog Enters., 2007 U.S. App. LEXIS 10912, at *13-14. The Examiner cites to Gu, col. 1, lines 22-27, for the proposition that one of ordinary skill in the art would have been motivated to modify Saville et al. to include a flat plate with individual foils mounted thereon "for the desired purpose of providing improved operation under extreme load conditions and accommodating eccentricity of relatively moveable elements, and further providing damping effect as taught by Gu." (Office Action, p. 3). Applicant respectfully submits that there were no such commonly understood benefits derived from the modification of Saville et al. as taught by Gu.

First, Gu states in the background section that foils are provided in the space between relatively moveable bearing elements, foils are generally thin sheets of a compliant material, foils provide improved operation under extreme load conditions when normal bearing failure might otherwise occur, foils accommodate eccentricity of relatively moveable elements and further provide a cushioning and damping effect. (Gu, '900 patent, col. 1, ll. 14-27). Therefore, Gu does nothing more than discuss the benefits of employing foils generally.

Second, Gu fails to teach any benefit (other than those generally discussed in the background section) that could have been appreciated by one of ordinary skill in art for the plurality of complaint foils 16 mounted on the thrust bearing disk 14 disclosed therein. Thus, Gu could not teach any commonly understood benefit of the combination of Gu and Saville et al. because the Saville et al. thrust bearing disk already included foils integrated within the disk. There was no motivation to modify Saville et al. in the manner suggested by the Examiner, and as discussed above, the object of the Saville et al. invention is to eliminate the need for separate foils. Indeed, the specific design of the Saville et al. bearing

disk – namely, using slots and diverging ramps – was developed to accommodate the integrated foils without compromising performance of the bearing disk from a standpoint of both compliancy and rigidity. (See Agrawal Decla., ¶ 10).

Third, even Gu appears to refute the Examiner's suggested modification of Saville et al. by stating that individual foils 16 may be mounted on the thrust bearing disk 14 as shown in FIG. 1, or alternatively, the foils may be unitary or integral with the thrust bearing disk. (Gu, '900 patent, col. 2, ll. 48-52). Thus, according to Gu, there is no value added by foils mounted to the thrust bearing disk. One of ordinary skill in the art would not have been motivated to try and modify the thrust bearing disk of Saville et al., after flattening it, to mount foils thereon, because according to Gu, there was no value added to such a modification and, as discussed above, Saville et al. teach that it is preferable to have the foils integral to the thrust bearing disk.

4. The combination suggested by the Examiner represents an unobvious step over the prior art.

The inclusion of top foils mounted to a flat thrust bearing disk was an unobvious step over Saville et al. See Leapfrog Enters., 2007 U.S. App. LEXIS 10912, at *15. Applicant respectfully submits that one of ordinary skill in the art would have considered the thrust bearing disk of the Saville et al. design to be superior than the thrust bearing disks suggested by Gu. One of ordinary skill in the art would have understood Saville's thrust bearing disk to possess the general benefits of foils as discussed by Gu, and also the benefits possessed by the integral Saville et al. design. Thus, the references support the conclusion that modifying the Saville et al. invention in the manner suggested by the Examiner represents an unobvious step over the prior art because it would have been unobvious to modify the Saville et al. invention to include a flat thrust bearing disk with foils mounted thereon.

5. Design considerations and other market forces prevent the modification of Saville et al. in the manner suggested by the Examiner.

"When a work is available in one field of endeavor, design considerations and other market forces can prompt variations of it…." KSR, 2007 U.S. LEXIS

4745, at *35. Applicant respectfully submits that design considerations and other market forces operate to prevent, not prompt, one of ordinary skill in the art to modify the prior art in the manner suggested by the Examiner.

First, design and marketability considerations for a thrust bearing designer of ordinary skill in the art at the time the Application was filed would have prevented modification of the Saville et al. thrust bearing disk instead of motivating one of ordinary skill to mount foils thereon because the thrust bearing disk of Saville et al. would have been considered to be superior than the thrust bearing disk of Gu. Second, Gu neither teaches nor implies any design or marketability benefits from employing individual foils 16 mounted on the thrust bearing disk 14 but Saville et al., on the other hand, provides both design and market considerations for integrating foils to the thrust bearing disk. (See, e.g., Saville et al., '583 patent, col. 3, l. 64 to col. 4, l. 3).

For at least the above-identified reasons, it would not have been obvious to combine Gu with Saville et al. in order to create the combination suggested by the Examiner. Accordingly, Applicant submits that the Examiner's rejection of claims 1-2, 8, 11-15 and 25-26 under 35 U.S.C. § 103(a) is improper, and should be withdrawn.

B. *Rejection of Claims 13-15 under 35 U.S.C. § 103(a)*

The Examiner has also rejected claims 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Saville et al. in view of Gu. The Examiner acknowledges that neither reference discloses lines of weakness extending from the outer diameter, or both the inner and outer diameters, wherein the lines of weakness are circumaxially dispersed about the thrust bearing plate in sequenced manner. Nevertheless, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to supply such features to the thrust bearing disk disclosed by Saville et al., as modified in view of Gu, without affecting the intended function of the disk. (Office Action, p. 4). Applicant respectfully submits that "[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR, 2007 U.S. LEXIS 4745, at *37 (citations and quotations omitted).

First, Applicant respectfully submits that the Examiner's conclusion is not supported by Saville et al. Referring to the Examiner's citation, Saville et al. merely states that the slots 18 need not be the same configuration in reference to each other on the same bearing disk and can vary from each other on same the bearing disk. Thus, a person of ordinary skill would not have read this statement in Saville et al. and designed lines of weakness extending from the outer diameter, or both the inner and outer diameters, wherein the lines of weakness are circumaxially dispersed about the thrust bearing plate in sequenced manner. Indeed none of the embodiments disclosed in either Saville et al. reference shows slits extending from the outer diameter in any way.

Second, Saville states that other configurations are possible, "such as those shown in [the '583 patent]." (Saville, '263 patent, col. 3, ll. 36-39). However, the '583 patent also fails to show Applicant's claimed features, instead showing L-shaped and U-shaped slots. (See Saville et al., '583 patent, FIGS. 1, 2, 4 and 6). Thus, a person of ordinary skill would have applied creative steps to employ other configurations such as those shown in Saville or the '583 patent, including L-shaped and U-shaped slots, but not lines of weakness extending from the outer diameter, or both the inner and outer diameters, wherein the lines of weakness are circumaxially dispersed about the thrust bearing plate in sequenced manner.

Third, the '583 patent discloses that straight radial slots may be used in combination with diverging surface ramps at the outer diameter of the thrust bearing disk. (See, e.g., Saville et al., '583 patent, col. 3, ll. 10-17, 34-42). Thus, one of ordinary skill in the art would not have employed lines of weakness extending from the outer diameter, or both the inner and outer diameters, because transition areas 20/surface ramps 30 were taught by Saville et al. and the '583 patent to be generally radially aligned with the slot. (See Saville et al., '583 patent, col. 3, ll. 14-16; FIGS. 4-7).

Fourth, Applicant respectfully submits that there was no design or market consideration for one of ordinary skill in the art reviewing the Saville et al. references to provide lines of weakness extending from the outer diameter, or both the inner and outer diameters, wherein the lines of weakness are circumaxially dispersed about the thrust bearing plate in sequenced manner. In fact, Saville et al. teach away from such a requirement by disclosing that "the

slots 18 can be deleted entirely and the bearing 10 can still provide acceptable performance." (Saville et al., '263 patent, col. 3, ll. 41-42). Moreover, the '583 patent shows "embodiments wherein the thrust bearing disk 44 includes a plurality of converging foils 46 separated by diverging ramps 48 which radially extend across the entire disk 44" and have no slots. (Saville et al., '583 patent, col. 3, ll. 43-48).

Accordingly, Applicant submits that the Examiner's rejection of claims 13-15 under 35 U.S.C. § 103(a), is improper, and should be withdrawn.

C. *Rejection of Claims 9, 17-18 and 23-24 under 35 U.S.C. § 103(a)*

The Examiner has rejected claims 9, 17-18 and 23-24 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Saville et al. in view of Gu as applied to Applicant's claim 1, and further in view of Heshmat. The Examiner acknowledges that Saville et al. do not disclose a spring plate having a plurality of decoupled bearing segments defined in part by generally radially extending lines of weakness, the decoupled bearing segments being circumferentially arranged about the spring plate. However, the Examiner asserts that Heshmat provides for "a spring plate with a plurality of decoupled bearing segments (fig 7) defined in part by lines of weakness (92)…", and further, that it would have been obvious to "incorporate the spring plate of Heshmat into the device of Saville...." (Office Action, p. 4).

As noted above, Saville et al. fail to disclose or suggest a flat thrust bearing plate with a plurality of foils disposed on the surface thereof. Instead, Saville et al. emphasize a thrust bearing disk with integrated, converging pads or foils that are separated by diverging ramps to form a stepped or waved profile. As further noted above, there is no evidence that one of ordinary skill in the art would deem it obvious to try to combine Gu with Saville et al. as the Examiner suggests. Accordingly, Applicant submits that the Examiner's rejection of claims 9, 17-18 and 23-24 under 35 U.S.C. § 103(a), is improper, and should be withdrawn.

Moreover, even assuming there is evidence that it was obvious to try to combine the references as the Examiner suggests, which Applicant contests, the combination nonetheless fails to teach each and every limitation of Applicant's claims because the flexible diaphragm 62 of Heshmat fails to provide for

decoupled bearing segments defined by lines of weakness. In Heshmat, any "segment" in the flexible diaphragm 62 is defined by solid portions of the diaphragm 62, as shown in Figure 7. Essentially, foils are placed over the slots, and the slots 92 are positioned within the "segments". Thus, Heshmat discloses an opposite structure than what Applicant claims (i.e., a plurality of decoupled bearing segments defined in part by a plurality of generally radially extending lines of weakness). Because the combination of the references as suggested by the Examiner would not provide for each and every limitation of Applicant's claims, Applicant respectfully submits that the Examiner's rejection of claims 9, 17-18 and 23-24 under 35 U.S.C. § 103(a), is improper, and should be withdrawn. (See also Saville et al., '263 patent, col. 5, ll. 24-21 (describing use of an underspring 22 with apertures 26 that extend under a portion of the springs 23 "in order to allow an area to terminate the spring portion 23 form.")).

Conclusion

In view of the foregoing, it is respectfully submitted that claims 1-2, 8-9, 11-15, 17-18 and 23-26 presented herein are allowable. All issues raised by the Examiner having been addressed herein, an early action to that effect is earnestly solicited.

Applicant believes no further fees are due with the filing of this Response. However, if it is determined that additional fees are required, please charge our Deposit Account No. 13-0235.

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